



STATE OF UTAH
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY

m/023/007

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May15, 2000

Gene Webb, Manager
North Lily Mining Company
1800 Glenarm Place, Suite 210
Denver, Colorado 80202

Subject: Response to PVC Liners Repair & QA/QC Procedures, Excess Water Management Plan, Closure Implementation Plan (Notice of Violation (NOV) and Order Docket Nos. UGW20-03 & UGW20-04)

Dear Mr. Webb:

The Division of Water Quality (DWQ) has received letters regarding Excess Fluid Management Plan dated April 18, 2000, Reclamation/Closure Implementation Plan dated April 18, 2000, and Liner Repair and QA/QC Procedures dated March 30, 2000. We have reviewed the proposals and appreciate the efforts taken to date.

Repair and QA/QC Procedures for PVC Solution Pond & Leach Pad Liners:

We reviewed the report detailing PVC liner repair and QA/QC procedures for the solution pond and leach pad liners prepared by JBR Environmental Consultants, Inc. The report was submitted to meet condition No. 2 of NOV and Order Docket NO. UGW20-04, issued to North Lily Mining on March 7, 2000. We have the following comments:

1. The above report indicates that the liners of the solution ponds have been repaired by patching utilizing a splicing solvent as the adhesive. Repair procedures and liner integrity testing according to QA/QC plans and specifications are listed in your report. An inspection was conducted by representatives from DWQ and DOGM on April 13, 2000, to verify that the liners were repaired according to manufacturer's specifications. We observed small peels that have occurred around the edge of some of the patched liners which could be an indication that the repair was not done following the stated specifications and/or that appropriate QA/QC testing was not performed.

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2. For all future PVC liners repair work, only patching according to the manufacturer's procedure listed in your report and the QA/QC testing method stated in your Excess Fluid Management Plan dated April 18, 2000, will be accepted. In addition to peel testing, vacuum box testing will be required for future liner repair work to ensure the integrity of the liners. A vacuum box testing is required for all patched liners except those that are located in areas which will be difficult to place the testing box due to curving or sloping. The liner re-certification of the relevant work must be done by a third party, who is a Registered Professional Engineer licensed to practice in the State of Utah. The liner re-certification package must be submitted to DWQ for review and approval by the Executive Secretary within 10 days after completion of liner repair and testing.

In NOV and Order No. UGW2004, condition No. 4, North Lily is required to complete liner repair of all storage ponds (pregnant, barren and overflow ponds) and restoration of Discharge Minimization Technology (DMT) by May 20, 2000, if North Lily continues utilizing the ponds. From a phone conversation with Mr. Stephen Flechner on May 11, 2000, we understand that North Lily cannot meet this deadline. According to Mr. Flechner, additional information and justification will be submitted for our consideration to modify the deadline and establish a new date to complete the work. This must be done prior to May 20, 2000, to avoid violating the order.

Excess Fluid Management Proposed Plan:

The proposed Excess Fluid Management plan was submitted to meet condition No. 3 of NOV and Order Docket No. UGW2004. The original proposed plan was submitted on April 4, 2000, and based on a meeting held between North Lily Mining, DWQ and DOGM on April 10, a subsequent revision was made and the revised proposal was submitted on April 18, 2000. We have reviewed the proposal and offer the following comments:

1. Your report indicates that an enhanced evaporation system will be installed on the leach pad as a short term fluid minimization and management measure. Upon completion of installation of the evaporation system, please submit a detail report stating the exact type, size and flow rate of the system for our record.
2. A floating submersible pump is proposed to be installed at the pregnant pond to enhance the pad evaporation system. If a floating pump will be used, frequent monitoring of the pond fluid level should be considered so that the pump will not damage the pond liners when fluid level in the pond is lowered. We suggest that floating pumps with an automatic switch or an alarm be installed to avoid liner damage due to low level of pond fluid.
3. You propose to install a flow measurement flume in the ditch to measure the drain down fluid flow from the pad. Upon completion of installation of the proposed flume, please submit As-Built reports

including design and specifications for our records. A monthly report incorporating the pad drain flow measurements from the flume must be submitted to our office before the 15th day of each month.

4. Upon completion of ditch clean-up and restoration, the under-drain system must be replaced. In our letter of August, 1996, we required North Lily to place an under-drain system that consists of a perforated pipe placed on top of the fine material in the bottom of the ditch covered with gravel and a filter fabric.
5. We do not believe that land application is a viable option to dispose the excess fluids. Under a previous land application approval by DWQ, North Lily did not adequately manage its responsibilities and oversight of the land application process. Proper testing of soils prior to and following land application was not completed in accordance with plan specifications. Additionally, the sprinklers were not rotated in the manner prescribed and too much water was applied to a small parcel of land resulting in damage to vegetation and potential ground water degradation. If land application is not done properly, it has the potential for creating ground water contamination through leachate and runoff. Based on North Lily's performance to date and the current dilapidated condition of the existing regulated facilities, it would not be prudent to extend authorization to additional facilities that would present a high risk to ground water quality if not properly operated and managed.

Reclamation/Closure Implementation Plan:

The proposed Reclamation/Closure Implementation Plan was submitted to meet condition No. 7 of NOV & Order No. UGW2003 issued to North Lily on October 19, 1999, by the Water Quality Board, and condition A of the Notice of Agency Action, Document NO. 2000-004 issued by DOGM.

1. The plan states that North Lily may consider constructing an infiltration gallery or a drain field to dispose of excess fluids that will be discharged from the pad during post-closure. As stated in your proposal, the pad drain down return flow will be determined before an infiltration gallery design will be proposed to DWQ for approval.

The effluent from the infiltration gallery or a drain field must meet the Utah Ground Water Quality Standards before fluid is disposed into the ground. If effluent can not meet the referenced standards, North Lily must make an assessment of the potential impacts to the ground water. This assessment must be included with your infiltration gallery proposal. This option will be feasible only if the assessment can conservatively demonstrate minimal risk to groundwater.

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2. It was stated in the report that metals remaining in solution are likely to be naturally attenuated in the soil if the solution is disposed in the infiltration gallery. According to our review of the laboratory analysis of the previous samples, cyanide concentrations are declining over time. However, other metals and TDS concentrations in the solution ponds and in the pad drain down fluids are increasing. Samples collected by DWQ on September 19, 1999, show higher metals and TDS concentrations than those reported previously.

DWQ believes that natural attenuation of these high concentration of metals will not be a viable option unless there is a clear evidence that attenuation capacity exists. Therefore, additional information will be necessary to demonstrate that natural attenuation is a feasible option.

3. Upon completion of each reclamation and closure milestone listed in your proposal, please submit a written summary of each activity and an As-Built report that demonstrates the work has been conducted and completed as per the dates listed in your report.

If you have any questions, please contact Beth Wondimu at (801) 538-6084.

Sincerely,



Fred Pehrson, P.E., Manager
Permits, Compliance & Monitoring Branch

cc: ~~Wayne Heuberg~~, Division of Oil, Gas and Mining

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